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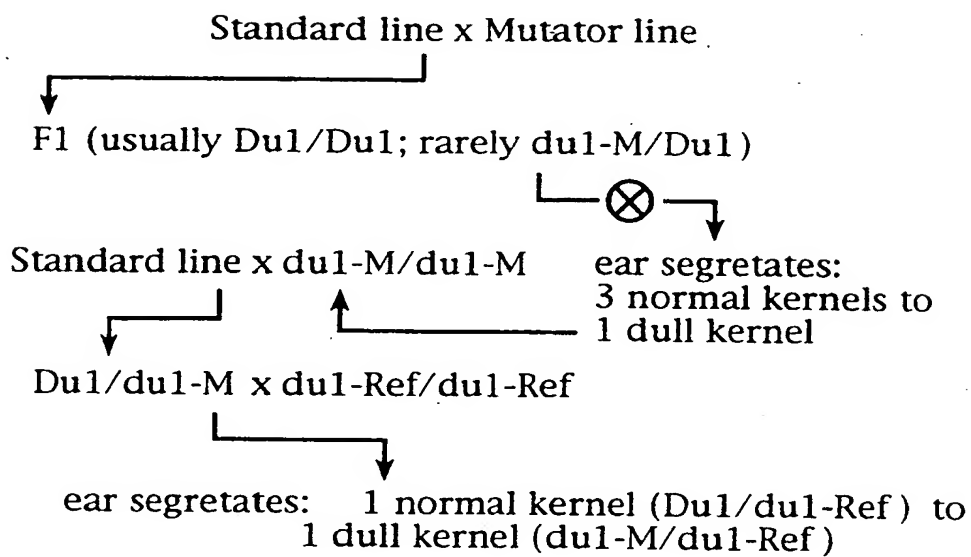


FIGURE 1A

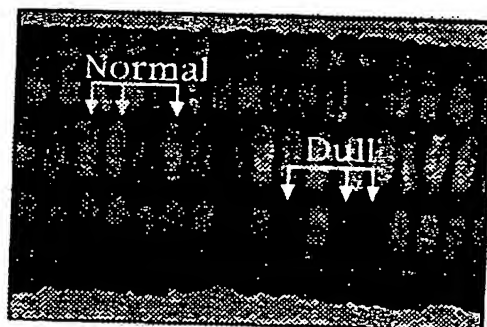


FIGURE 1B

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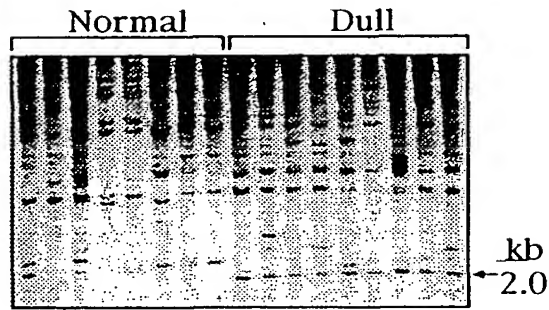


FIGURE 2A



FIGURE 2B

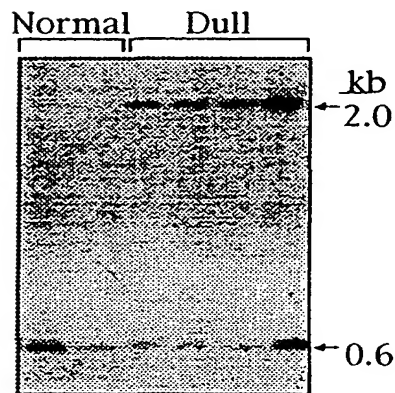


FIGURE 2C

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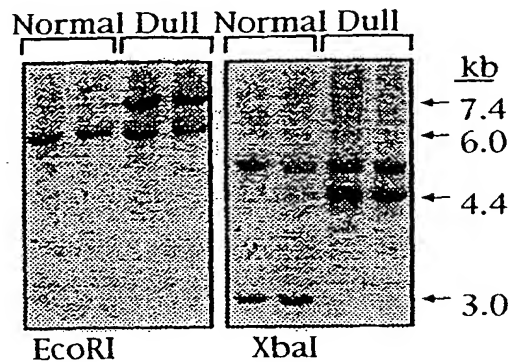


FIGURE 3A

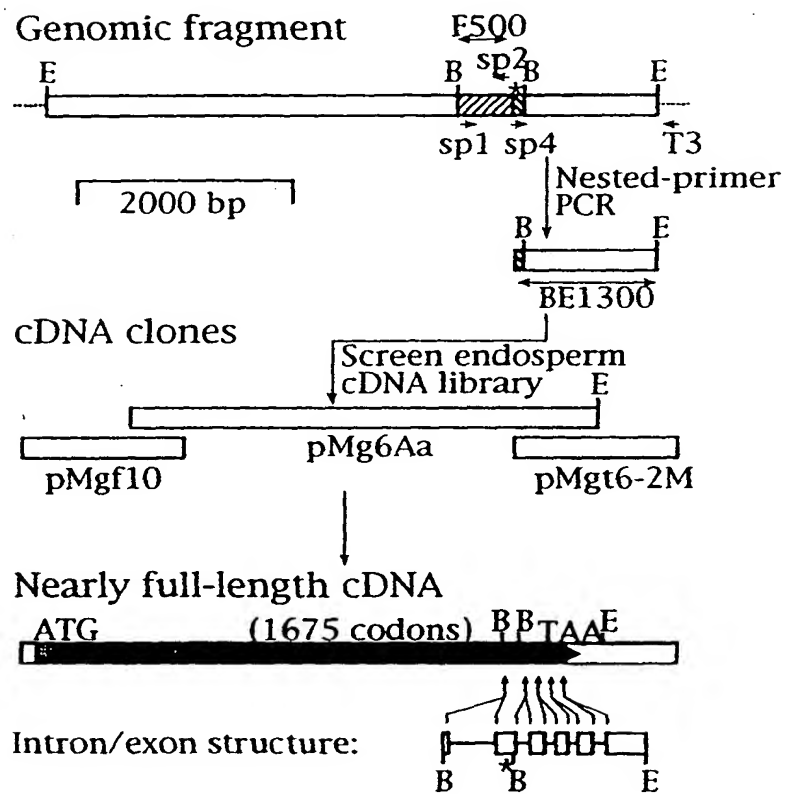


FIGURE 3B

Title: dull1 CODING FOR A NOVEL
STARCH SYNTHASE AND USES THEREOF
Inventor Name: Alan M. Myers et al.
Appl. No. UnAssigned
Docket No.: ISU-003BX

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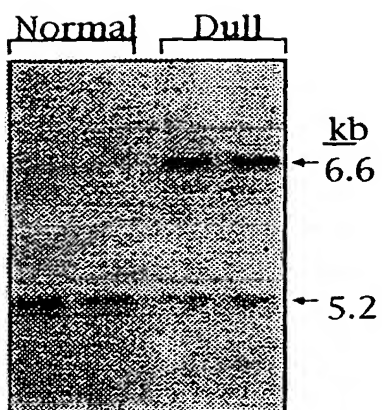


FIGURE 4

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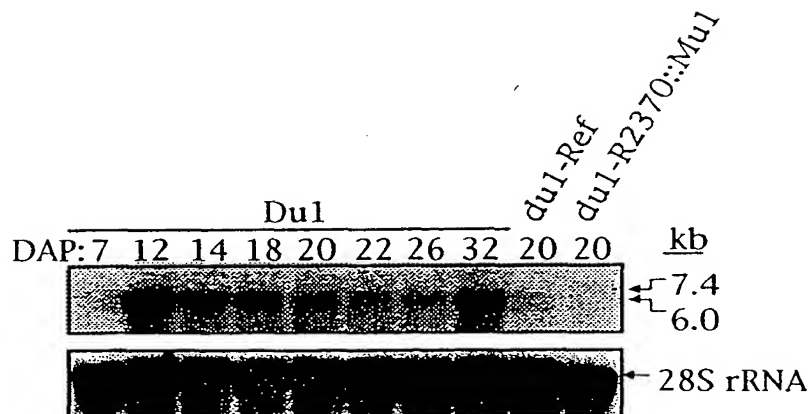


FIGURE 5A

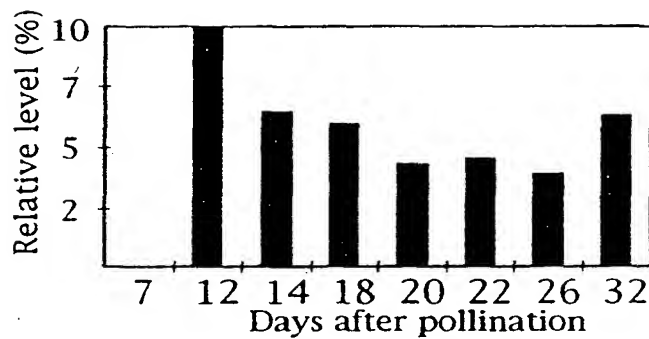


FIGURE 5B

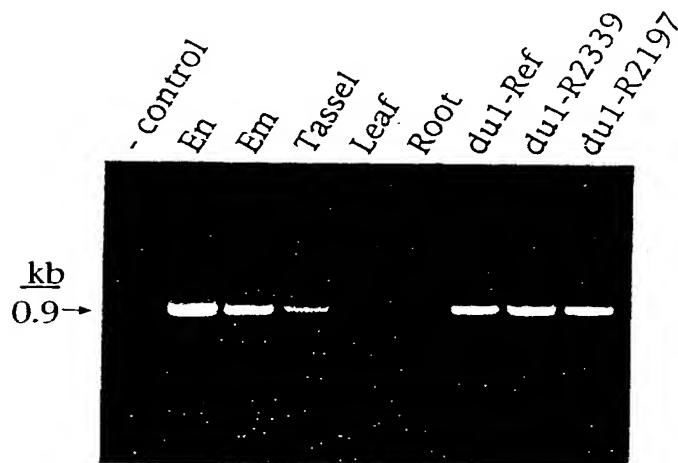


FIGURE 5C

	MEMVLRSQSPCLCLRSQGPVLIFRPTVAGGGG	30
DU1	GTQSLRLTRFARRRVIRCVVASPGCPNKRKSRTPNVKVAAYSNYAPRLLVSSSKKS	89
DU1	EHHDSRRHREETIDTYNGLSGDAAELTSNRDVEIEVDLQHISEELPGKVSINASLGE	148
DU1	MEVDEAEVEEDKFEVDTSGIVLRNVAVREVDPKDEHNAKDVVVDDSSGTAPDNAAVEE	207
DU1	VVDEAEVEEDMVDVDILGLDLNNAETIEIDLMEEALENFVDVDSPGNASSGRRTYGGVDE	266
DU1	LGELPSTSVDCIAINGKRRSLKPKPLPIVRFQEQEQIVLSIVDEEGLIASSCEEQGPVV	325
DU1	DYDKQEEENSTAFDEQKQLTDDFPEEGISIVHFPEPNNDIVGSSKFLEQKQELDGSYKQD	384
DU1	RSTTGLHEQDQSVVSSHGQDKSIVGVPQQIQYNDQSIAGSHRQDQSIAGAPEQIQSVAG	443
DU1	YIKPNQSIQVGSCKQHELIIPPEKKIESIISYNEIDQSIQVSHKQDKSVVSVPEQIQSIV	502
SS3	MDVPFPLHRSLSCTSVSNAITHLKIKPILGFVSHGTTLSLVQSSSWRKDGMVTGVS	56
DU1	SHSKPNQSVVDSYRQAESIIQVPEKVQSITSYDKLDQSIQVSLRQDEPIISVPEKIQSI	561
SS3	FSICANFISGRRRRKVVSTPRSQSSPKGFVPRKPSGMSTQKVKQKSNQDKESKSTSTKE	115
DU1	VHYTKPNQSIQVGLPKQQQSIIVHTIEPKQSIDGFPKQDIISIVGTSNEFQTKQLATVGTGD	620
SS3	SEISNQKTVEARVETSDDDTKGWRDHKFLDEDEINGSTKSLSMSPVRVSSQFVESEE	174
DU1	GLLMKGVEARQETSQKTEGDTLQATFNVDNLSQKQEGITKEADEITIEKINDEDLVMIE	679
SS3	TGGDDKDAVKLNKSKRSEESGFIIDSIVREQSGSQGFIINASSKGSNAVGTGLYELLQVD	233

FIGURE 6A-1

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DU1	EQSIAMNEEQTI	TEEDIPMAKVEIGIDKAKFLIL	SESSWDNEVGIIEADEQYVE	738	
SS3	VEPQOLKENNAGNVEYKGPVASKL	LEITKASDVETTESNEIDDL	DNNSFFKSDLEIEDE	292	
DU1	VDETSMTSECI	IOESPNDLDPQALWSMLQELAEK	NYSLGNKLFYTPDVLKADSTIDLY	797	
SS3	PLAAGTVETC	SSSLNRLMEANLRRQAERLAEN	LLOGIRLECFPEWVKPDEDVEIF	351	
DU1	FNRDLSAVANE	PDVLTKGAFNCKWRRFFTEK	LHKSELAGDWMCKKLYIPKQAYRMDFVF	856	
SS3	LNRLSLTLKNE	SDVLTJMGAFNEWRYSSETRL	TETHLNGDWMCKIHVPEAYRADDFVF	410	
DU1	FNGHTVYENNN	NDFVITQIESTMDENLFEFLAEK	QRELENLANEEAEERRRQTDQRR	915	
SS3	FNGQDVYDNN	DCNDESLITVKGGMQIIDEFENEL	LEEKWRECEKLAKEQAEERLAEQRR	469	
DU1	MEFERAADKAD	RVOAKVEVETKKNKLCNVLGL	ARAPVDNLWYIEPITTCQEAJVRLYN	974	
SS3	IEAEKAEIEAD	RAQAKEEAAKKKVLREL	MVKA TKTRDITWYIEPSEFKCEDKVRLYN	528	
DU1	INSRPLVHSTE	IMHGGYNNMIDGLSFAERLV	HHDKDCDWMFADVVPERTYVLDWVF	1033	
SS3	KSSCPISHAKD	IMHGGYNNMKDGLSIVKKLYK	SERIDCDWMYTEVVIIDQALFLDWVF	587	
DU1	ADGPPGSA	RNYDNNGGHDFHATLPNNMTE	EEYWMEEEOQRTYTRLOQERREREAIKKA	1092	
SS3	ADGPPKHAI	AYDNNHRODFHAI	VENHIPEELVWEEHQIFKTLQERRLREAA	646	
DU1	ERNAKMKA	EMKEKTMFMFLSQKHIVYTEP	LETHAGTTIDVLYNPSNTVLIGKPEVWFR	1151	
SS3	EKTALLKITE	KERTMKSELSOKHVIVYTEP	LDIAGSSVTMYNPNANTVLANGKPEIWER	705	
DU1	CSFNRWVY	PGGLPPQKMVOAENGSHL	KATVYVERDAYMDFVFSESEGGIYDNRNGL	1210	
SS3	CSFNRWTHRL	GLPLPPQKMSPAENGTHVR	ATVYVERDAYMDFVFSESEGGIYDNRNGL	764	
DU1	DYHIPVFG	SI	AKEPPMHIVHIAVEMAPIAKVGG	LGDDVVTLSRAVQDLGHNV	1269
SS3	DYHIPVFG	GV	AKEPPMHIVHIAVEMAPIAKVGG	LGDDVVTLSRAVQDLGHNV	823
DU1	GCTNLS	NVKNLQIHQSFSWGGSEIN	VWRGLVEGLVYFLEPONGMFGVGMVYG	RDOR	
SS3	DCIAKNNV	KDFRHKNYFWGGTEIKVWFG	VWGLVYFLEPONGI	ESKGVYGCSDGE	

FIGURE 6A-2

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DU1	RFGFFCRSALEFLLQSGSSPNIIHCHDWSSAPVAILHKEENYAKSSLANARVFTIHNLE	1387
SS3	RFGFFCHAALEFLLQSGFSDIIHCHDWSSAPVAILHKEEQYTHYGLSKSRIVFTIHNLE	941
DU1	FGAHHICKAMRYCDKATTVSNTYSKEVSGHGAIIPHILCKFYGILNGIDPDIWDFYNDNF	1446
SS3	FGADLIGRAMTNADKATTVSPTYSQEVSGNPVIPPPIHKEFGIVNGIDPDIWDFLNDKE	1000
DU1	IPVHYTCENVVEGKRAAKRALQCKFGLCQIDMPVVGIVTRLTHOKGIHLIKHAIHRTLE	1505
SS3	IPVPTSENVVEGKTAKEALORHGLICQADIPVVGITRLTHOKGIHLIKHAIHRTLE	1059
DU1	RNGQVLLGSAPDRHQADFVNLANILHGVNHGQVRISLTYDEPLSHLIYAGSDFILVF	1564
SS3	RNGQVLLGSAPDRHMONNEVNLANQLH SKYNDRAELCLTYDEPLSHLIYAGSDFILVF	1118
DU1	SIFEPCGLTOLVAMRYGTHIPVRKTGGLEDTVFEDVDNDKERARDRELEPNGFSFDGADS	1623
SS3	SIFEPCGLTOLVAMRYGTHIPVRKTGGLEDTVFEDVDNDKERAQCCGLEPNGFSFDGADA	1177
DU1	NGVDYALNRATSAWFDARSWFSLCKVMEQDWSWNRPALDYIELYRQASKL	1674
SS3	GGVDYALNRATSAWFDGRWENSLCKVMEQDWSWNRPALDYIELYHARKLE	1230

DU1 (SEQ ID NO: 12)

SS3 (SEQ ID NO: 35)

FIGURE 6A-3

Title: dull1 CODING FOR A NOVEL
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Docket No.: ISU-003BX

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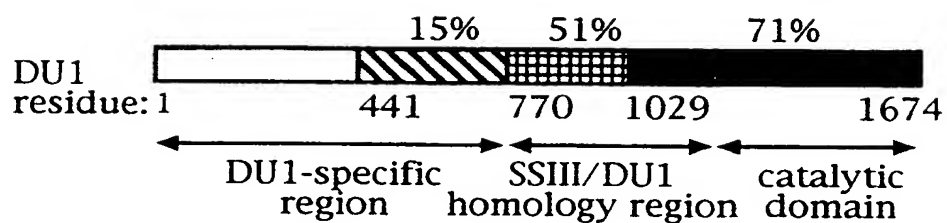


FIGURE 6B

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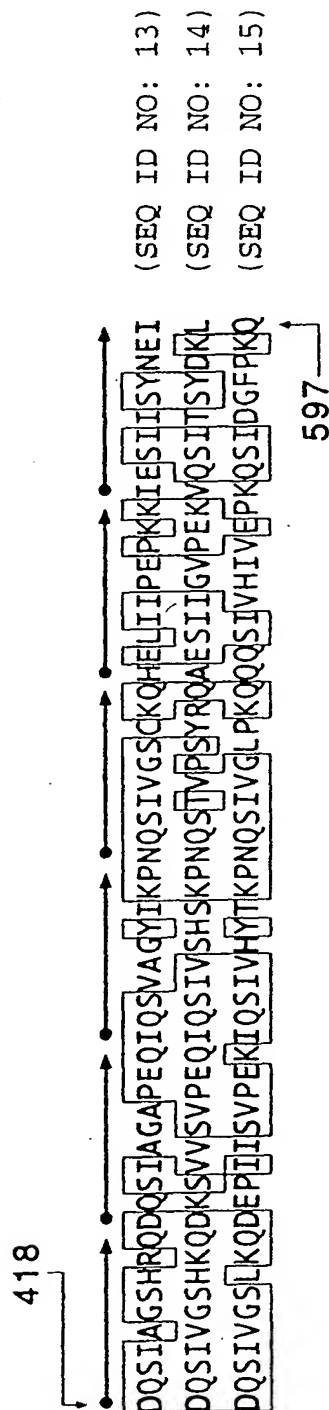


FIGURE 7A

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SBE-repeats in DU1:

478	DQSI	VG	SHKQ	487	(SEQ ID NO: 16)
538	DQSI	VG	SLKQ	547	(SEQ ID NO: 17)
	6/6 match				
448	NQSI	VG	SCIKQ	457	(SEQ ID NO: 18)
568	NQSI	VG	LPKQ	577	(SEQ ID NO: 19)
418	DQSI	AG	SHRQ	427	(SEQ ID NO: 20)
428	DQSI	AG	APEQ	437	(SEQ ID NO: 21)
404	DKSI	VG	VPQQ	413	(SEQ ID NO: 22)
598	DLSI	VG	NEFQ	607	(SEQ ID NO: 23)
	5/6 match				

FIGURE 7B-1

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SBEI family:

Maize SBEI	KCIAYAESH DQSIVG DKTIAFLLMD	(SEQ ID NO: 24)
Pea SBEII	KCVSYAESH DQSIVG DKTIAFLLMD	(SEQ ID NO: 25)
Wheat SBEI	KCIAYAESH DQSIVG DKTMAFLLMD	(SEQ ID NO: 26)

6/6 match

SBEII family:

Maize SBEIIa	KCVTYCESH DQALVG DKTIAFWLMD	(SEQ ID NO: 27)
Maize SBEIIb	KCVTYAESH DQALVG DKTIAFWLMD	(SEQ ID NO: 28)
Pea SBEI	KCVVYCESH DQALVG DKTIAFWLMD	(SEQ ID NO: 29)

4/6 match

Glycogen branching enzymes:

Yeast GLC3	KVVAVCESH DQALVG DKTSLAFWLMD	(SEQ ID NO: 30)
Human liver	KCIAVAESH DQALVG DKTTLAFWLMD	(SEQ ID NO: 31)

4/6 match

FIGURE 7B-2

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150 → [E]TVDEAEVEEDK-- [F]EVDTSGLRNVAVR (SEQ ID NO: 32)
 [E]VDPKDEHNAKDV [F]VVDSSGTAPDNAVE (SEQ ID NO: 33)
 [E]VVDEAEVEEDM--VVDVILGLDNNATI ← 233 (SEQ ID NO: 34)

FIGURE 7C

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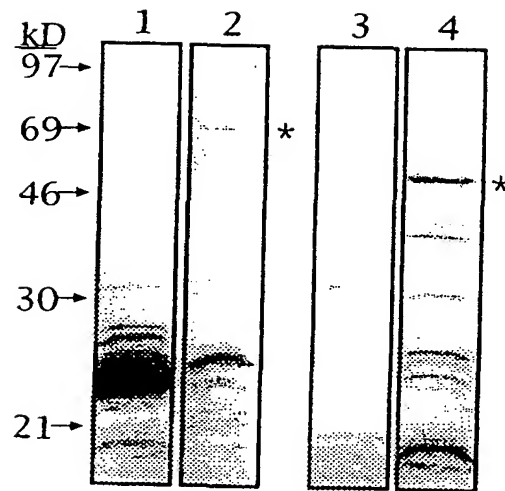


FIGURE 8

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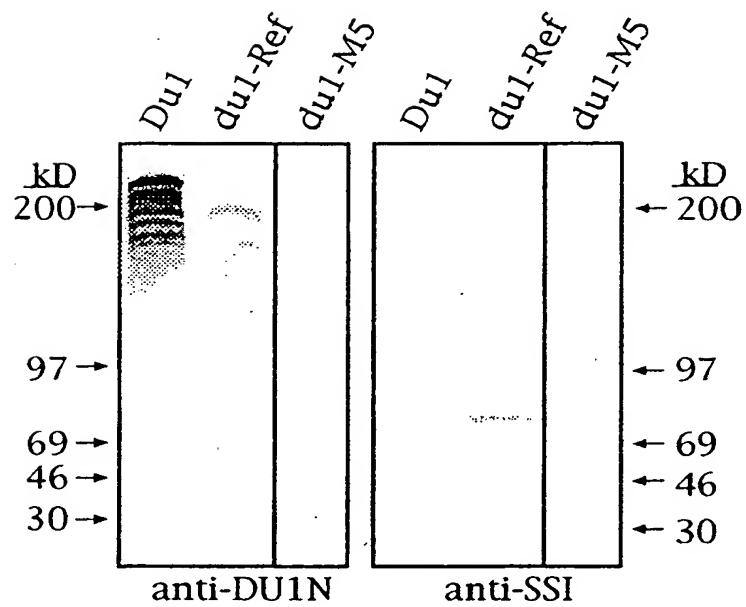


FIGURE 9A

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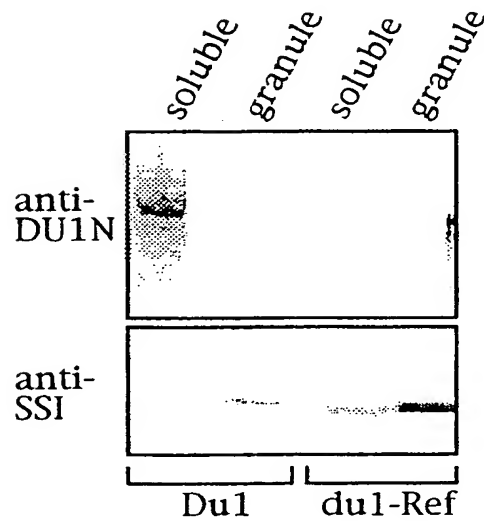


FIGURE 9B

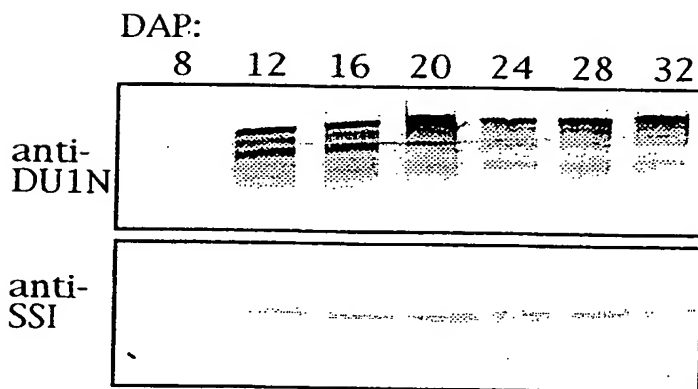


FIGURE 9C

Title: dull1 CODING FOR A NOVEL
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Inventor Name: Alan M. Myers et al.
Appl. No. UnAssigned
Docket No.: ISU-003BX

17119

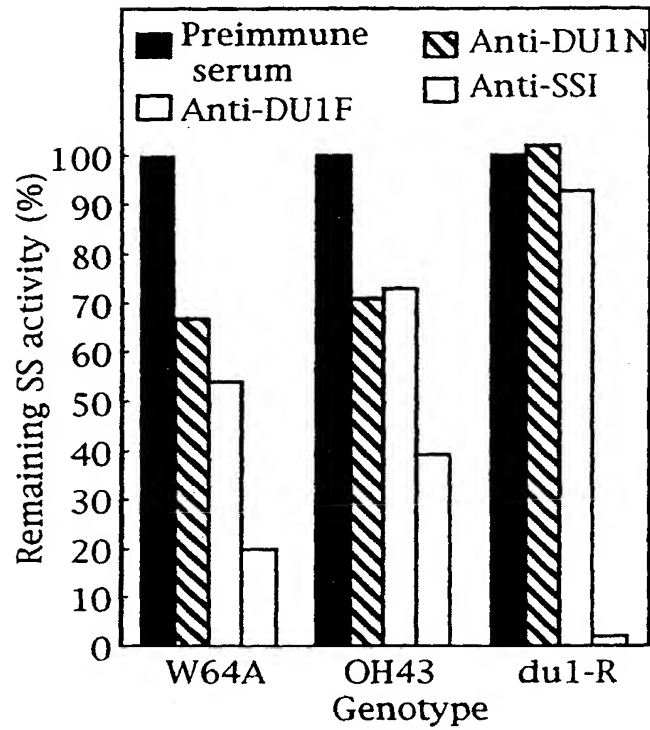


FIGURE 10

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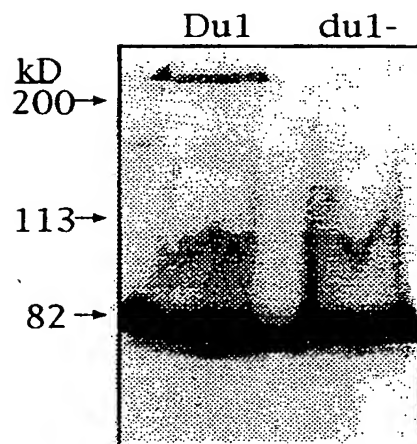


FIGURE 11A

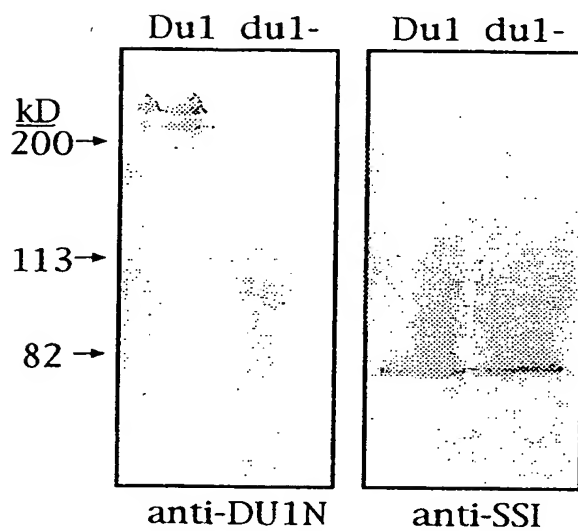


FIGURE 11B

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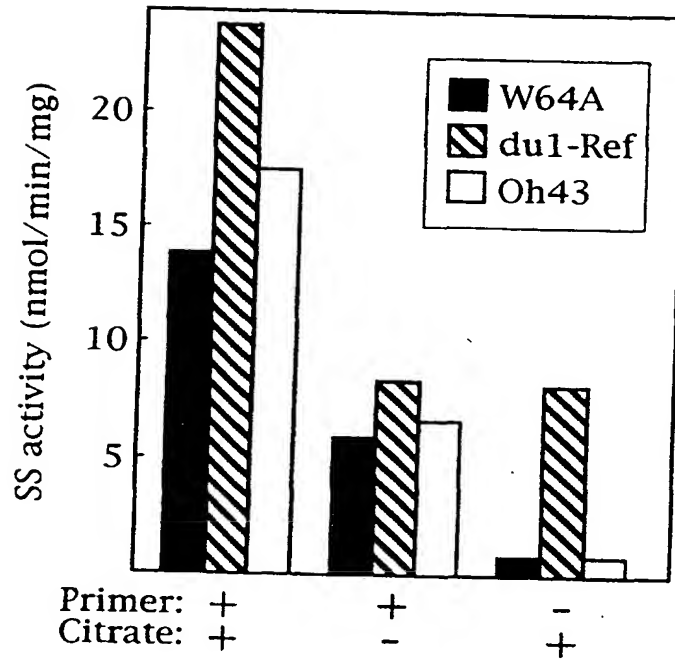


FIGURE 12